

REMARKS

The Office examined claims 1-18 and rejected same. With this paper, various of the claims are amended, none are canceled, and no new claims are added, so that claims 1-18 remain in the application.

Rejections under 35 USC §112, second paragraph

At section 2 of the Office action, claims 3, 9-13, 15 and 16 are rejected under 35 USC §112, second paragraph, for failing to point out and distinctly claim subject matter the applicant regards as the invention. With this paper, the so-rejected claims are changed in a way believed to overcome the grounds for rejections. Accordingly, applicant respectfully requests that the rejections under 35 USC §112, second paragraph, be reconsidered and withdrawn.

Rejections under 35 USC §102

At section 11 of the Office action, claims 1, 2, 9, 14 and 16-18 are rejected under 35 USC §102 as being anticipated by Wilson (U.S. Pub. 2001/0032269).

The independent claims are 1, 14, and 16-18.

Regarding claim 1, it is now amended to recite that the sender receives a message including one or more bits set to convey an indication of low congestion, instead of simply receiving an indication of low congestion. Support is provided at, e.g. page 17, ll. 1-23, which reads:

Congestion notification 10d can be accomplished by e.g. using a single bit, and so to indicate to the sender 30 whether to increase or decrease the transmission rate, as per e.g. in DRAFT-MBIT, RFC2581 and RFC2481. A one-bit congestion indication can be conveyed to the sender 30 in various ways, including e.g. by use of a so-called experimental bit in the TCP header of a TCP SYN or TCP SYN/ACK communication; if this scheme is to be used in

conjunction with the M-bit scheme (for indicating a path change), the experimental bit must of course be different from that defined by DRAFT-MBIT for indicating a path change. Another way to convey the one-bit congestion indication is by use of an option in TCP to provide one bit of information with a TCP SYN or TCP SYN/ACK communication. In addition, other signalling mechanisms can be used to convey a one-bit congestion indicator, including e.g. defining a new protocol, modifying an existing protocol, or using an existing protocol to carry the one bit of information, so long as the behavior at the sender 30 is according to the invention, i.e. accelerated start upon receiving an indication of low congestion. The invention also encompasses having a congestion indication provided to the sender 30 as a multi-bit congestion indicator, as might be conveyed using existing protocols or as might be conveyed using new, as yet undefined protocols.

(By way of clarification of the above, the language "as per e.g. in DRAFT-MBIT, RFC2581 and RFC 2481" means that the transmission rate may be increased or decreased as set out in those documents, not that a single bit for congestion notification is disclosed in those documents.)

Thus, claim 1 is now amended to more distinctly claim that in the invention a message is received including bits set (by the sender of the message) to specifically indicate low congestion. Applicant respectfully submits that in contrast Wilson teaches only a system in which a sender receives an ACK (and/ or an NAK) for a packet that sometimes includes a marking added to the packet (and copied to the ACK and/ or an ACK) by the sender "to indicate possible congestion" [first sentence of par. [0040]]. So whereas in the invention as in claim 1 a sender receives a message including one or more bits set to convey an indication of low congestion, Wilson teaches only providing an indication of "possible congestion."

Claims 14 and 16-18 are also changed to recite that the sender receives a *message including one or more bits set to convey an indication of low congestion*, and so are believed

distinguished from Wilson for the same reasons as given above for claim 1.

Accordingly, applicant respectfully requests that the rejections under 35 USC §102 be reconsidered and withdrawn.

Rejections under 35 USC §103

At section 13 of the Office action, claims 3, 10-13 and 15 are rejected under 35 USC §103 as being unpatentable over Wilson in view of RFC 2001.

Regarding claim 3, the Office action relies on section 4 of RFC2001 to reject claim 3. Claim 3 recites that in the step (20c) in which the sender (30) increases the data transmission rate, the sender performs an accelerated start in which the sender sets a slow start threshold to a standard initial value and re-initializes the congestion window value to a new predetermined value to achieve increased throughput, and then grows the congestion window at a predetermined rate in respect to received positive acknowledgments. Claim 3 depends from claim 2, which depends from claim 1, and therefore, the accelerated start recited in claim 3 is in response to a message including one or more bits set to convey an indication of low congestion.

Applicant respectfully submits that section 4 of RFC2001 discloses two possible procedures in case of receiving an indication of high congestion. The indication of high congestion is receipt by the sender of duplicate ACKs from the receiver. One procedure disclosed in section 4--called the fast recovery procedure--is that of performing (only) a congestion avoidance procedure (as opposed to congestion avoidance combined with a slow start procedure) after retransmitting a missing segment (the congestion avoidance procedure. The other procedure is a combination of congestion avoidance and fast retransmit. In either case, though, as noted, the procedures are used only in

response to an indication of high congestion, exactly the opposite of what is recited in claim 3. The Office action argues that "it would have been obvious to one skilled in the art to modify Wilson to use an accelerated start with re-initialized the congestion window value (*sic*) as taught by RFC 2001 in order to improve throughput (section 4. Fast Recovery Line 1-4)."

Applicant respectfully submits that RFC2001 nowhere teaches or suggests re-initializing the congestion window value to a new predetermined value to achieve increased throughput in response to an indication of low congestion, nor does Wilson, nor does the Office action assert there is such a teaching or suggestion. Instead, the Office action only asserts that so doing would be obvious because it would have a good effect (increased throughput), and applicant respectfully submits that such reasoning cannot fairly be used to reject a claim based on a combination.

To combine references, as set out in the MPEP at 706.02(j), the Office action must establish a *prima facie* case of obviousness, which requires that there be, first, "some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings," second, that "there must be a reasonable expectation of success," and third, that the combination made in the Office "teach or suggest all the claim limitations." The Office action does not show where there is the required "suggestion or motivation" and/ or the combination does not teach or suggest all the limitations. Regarding the motivation, applicant respectfully submits that what is required is not the general motivation of "increasing throughput," but instead the motivation to combine the teachings to end up with the invention as claimed, which in this case requires ending up with a step of performing an

accelerated start (as recited in claim 3) in response to receiving an indication of low congestion. The combination made in the Office action simply adds to the teachings of Wilson the "fast recovery/ congestion avoidance" (or possibly also the fast recovery + fast retransmit) procedure of RFC2001, which is performed after re-transmitting a missing segment in response to an indication of high congestion. Thus, even assuming, *arguendo*, that the combination made in the Office action has the required suggestion or motivation, it does not result in the invention as in claim 3. But further, there is not even provided in the Office action the required suggestion or motivation for making the combination that *is* made in the Office action--i.e. a showing that there is a suggestion or motivation not for increasing throughput, but for adding fast recovery to the teachings of Wilson (assuming, *arguendo*, that Wilson teaches a sender receiving a message including one or more bits set to convey an indication of low congestion, which applicant has argued above, Wilson does not).

Regarding claims 10-13, they are amended by this paper to depend directly or indirectly from claim 3, and so are believed allowable for the same reasons as given for claim 3. Regarding claim 15, it recites means corresponding to the step of performing accelerated start recited in claim 3 (i.e. in response to receiving a message bearing an indication of low congestion), and so is believed allowable for the same reasons as given for claim 3.

Accordingly, applicant respectfully requests that the rejections under 35 USC §103 based on Wilson and RFC2001 be reconsidered and withdrawn.

At section 14 of the Office action, claims 4-8 are rejected under 35 USC §103 as being unpatentable over Wilson in view of Qaddoura (US 6,646,987).

Claims 4-8 depend from claim 1, believed allowable for the reasons given above.

Accordingly, applicant respectfully requests that the rejections under 35 USC §103 based on Wilson and Qaddoura be reconsidered and withdrawn.

Conclusion

For all the foregoing reasons it is believed that all of the claims of the application are in condition for allowance and their passage to issue is earnestly solicited. Applicant's attorney urges the Examiner to call to discuss the present response if anything in the present response is unclear or unpersuasive.

Respectfully submitted,

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Date

WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
755 Main Street, P.O. Box 224
Monroe, CT 06468-0224



James A. Retter

Registration No. 41,266

tel: (203) 261-1234
Cust. No.: 004955